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AN ESSAY

ON THE

DISEASES OF THE JAWS,

AND

Their Treatment.

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AN ESSAY

ON THE

DISEASES OF THE JAWS,

AND

Their Treatment;

WITH

OBSERVATIONS ON THE AMPUTATION

OF A PART

OR

The whole of the Inferior Maxilla;

TENDING

TO PROVE THAT SUCH OPERATION IS SELDOM,

IF EVER, NECESSARY.

With Two Plates,

BY

LEONARD KOECKER,

Surgeon-Dentist,

DOCTOR IN MEDICINE AND SURGERY; MEMBER OF THE MEDICAL AND LINNÆAN SOCIETIES, AND OF THE ACADEMY OF NATURAL SCIENCE OF PHILADELPHIA,

AND

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ETC. ETC. ETC,

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TO

SIR HEN. HALFORD, BART. K.C.H.

M.D. F.R.S. F.A.S.

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS,

PHYSICIAN IN ORDINARY TO THE KING,

ETC. ETC. ETC.

SIR,

THE liberal manner in which you have done me the honour to receive this small Essay under your professional protection is, at the same time, most grateful to my feelings, and an evidence of the lively interest you take, not only in the advancement of the Science of Medicine in that important department, of which you have so long been the most distinguished member, but also in every other branch of the Healing Art.

The elevated rank you hold in the Medical profession, and the exalted station to which your distinguished merits have most deservedly raised you, as well as the urba-

nity and amiability of your manners, are so generally known, and so highly appreciated, that it would be presumption in a foreigner to suppose that any eulogium from his pen could add to the estimation in which they are universally held.

Permit me, therefore, Sir, only to express the sincere gratitude I entertain for the generous exercise of that urbanity and friendly politeness to myself, and the great satisfaction I feel in the opportunity thus afforded me of offering the following practical reflections on an interesting subject of Surgery to the notice of the Profession, under the sanction of your celebrated name.

I have the honour to be,

SIR,

With the greatest respect and regard,

Your most obedient,

and obliged Servant,

LEONARD KOECKER.

15, *Conduit Street,*
Hanover Square,
1828.

PREFACE.

THE publication of the present Essay has, for various reasons, been considerably delayed, and it is not without some anxiety that I at length venture to offer it to public notice.

I am well aware of the difficulties with which the foreigner has to contend in any country as a writer, more especially when his opinions may be supposed to aim at novelty or originality; and, notwithstanding the flattering encouragements which my "Principles of Dental Surgery" received from most of the guardians of the healing art, the medical and surgical journalists of this country, I am not the less diffident in my present attempt, as it is my most earnest wish to retain their good opinion, by making myself useful to humanity and the profession as far as my feeble powers will permit.

In publishing this small Essay, I may be accused of a presumptuous attempt to treat on a subject which does not belong to my particular province; this, I trust however, will be deemed erroneous, when it is considered that, although in their later and more complicated stages the maladies of the jaws require the united aid of general surgery and medicine, they strictly, in their earlier forms, belong to the practice of dentistry, and never would require the assistance of the former, if the latter were judiciously afforded at a proper period.

There is, moreover, a considerable difficulty in deciding at what period the exclusive treatment of the teeth becomes insufficient, and when the surgical and medical agencies are indispensably required; an inconvenience which can only be removed by affording all branches of the healing art the means of acquiring the most comprehensive views of the history, nature, and causes of the diseases in question.

That the dental surgeon has the best, and

most extensive practical opportunities of observing and watching these maladies through their different stages can scarcely be denied, and he may, therefore, fairly be regarded as not unqualified to give such a complete account of his pathological and practical observations, as may be most useful in their elucidation. These reasons, combined with the nature and intricacy of the subject, will, I trust, sufficiently apologize not only for the liberty I have taken in publishing this Essay, but also for having treated the subject in a more extensive manner than, under other circumstances, might appear necessary.

Many of the remarks which it comprises are the result of repeated and unprejudiced observations and reflexion; and it is the conviction I entertain of their practical utility, which induces me to hope that they will not be deemed undeserving of the notice of the medical profession at large. Under this impression, I feel it my duty no longer to delay their publication, and whatever may be the literary imperfections

of my work, I doubt not it will meet with every indulgence due to the peculiar circumstances of its author, assured as I am, that the best and purest intentions can never be misinterpreted by the liberal and enlightened British public, so justly celebrated for its philanthropy and good feelings towards every citizen of the world.

CONTENTS.

PRELIMINARY REMARKS - - - 11

PHYSIOLOGICAL AND PATHOLOGICAL REMARKS ON THE JAWS - - 28

OF THE SYMPTOMS OF THE DISEASES OF THE JAWS - - - - 37

OF THE CAUSES OF THE DISEASES OF THE JAWS - - - - - 38

OF INFLAMMATION AND SUPPURATION OF THE JAWS - - - - 45

OF FISTULOUS PERFORATIONS AND ABSCESSES OF THE JAWS - - 47

OF MALIGNANT OR CANCEROUS AFFECTIONS OF THE JAWS - - - 49

CASE I. - - - 51

OF POLYPOUS, ŒDEMATOUS, SARCOMATOUS, FUNGOUS, AND OSTEOSARCOMATOUS TUMOURS AND EXCRESCENCES OF THE JAWS - - - 55

CASE II. - - - 57

OF THE TREATMENT OF THE DISEASES OF THE JAWS - - - - 60

Of the treatment of inflammation and suppuration of the jaws 61

CASE III. - - - 63

Of the treatment of fistulous abscesses of the jaws - - 69

Of the treatment of malignant or cancerous affections of the jaws - - - - - - 72

Of the treatment of polypous, œdematous, sarcomatous, fungous, and osteosarcomatous tumours or excrescences of the jaws - - - - - 73

CASE IV. - - - 79

—— V. - - - 84

AN ESSAY

ON THE

DISEASES OF THE JAWS.

PRELIMINARY REMARKS.

THE maladies of the maxillary bones are occasionally of a very appalling nature, and may be considered as constituting some of the most distressing diseases to which the human frame is liable.

They are frequently regarded as incurable; and, consequently, too often neglected at their commencement, or improperly treated in their advanced stages; and are thus suffered to proceed in their destructive progress towards a painful and fatal termination.

It is probable, that these unfortunate results are in many instances attributable to erroneous views of the nature of the diseased structures; as an instance of this, it may be stated, that Mr. John Hunter, that illustrious pathologist, when treating of the disease of the maxillary antrum in his Natural History of the Teeth, part I. page 44, being probably misled by his well known theory of the inorganization of the teeth, inclines to an opinion that these diseases originate from an obliteration of the duct leading to the nose, whereas, accurate observation shows that the closure of the opening in question is the consequence, and not the cause, of the inflammation of the antrum. That Mr. Hunter's opinion is erroneous, is farther proved by the fact, that a similar disease occasionally affects the lower jaw; and with respect to which he is entirely silent.

His proposed plan of perforating the partition between the antrum and the nose, as well as of opening the inside of the lip, is not only entirely useless in a curative view, but likely to increase the disease; and very probably such treatment would never have been successful, even in the first stage of the disease, had it not

been combined with better remedies, which, however, from some unhappy prejudice, or erroneous principle, were considered as secondary means, and seldom adopted until the patient had previously been subjected to painful and unnecessary operations.

Mr. Fox regards the disease in the same light as Mr. Hunter; but as he has taken a more extensive view of the subject, his observations require fuller consideration.

In his Natural History, &c. of the Teeth, part II. page 124, he says, "Inflammation in the antrum is often occasioned by diseases of the teeth, but it also occurs when the teeth are quite sound. Sometimes in examining the prepared bones of the head, one or more fangs of the large molares may be found passing into the cavity. In such a case, inflammation excited by a diseased tooth is speedily communicated to the membrane lining the cavity and causes suppuration."

These views, which constitute the ground-work of his surgical treatment of such diseases, are unquestionably erroneous, which is the more surprising when we consider that they are contradictory to his own theory of the vitality of the teeth.

The fangs of the large grinders, or, indeed, of any other tooth, never enter into the cavity of the jaw in the living subject, so long as they are possessed of vitality. Such appearances observable in anatomical preparations result from the bony structure surrounding the points of these fangs having been destroyed by the boiling or maceration in acids, or other processes, to which the maxillæ had been subjected in order to clean them from their soft parts.

Whenever the fangs have passed into the cavity of the antrum, previously to death, they will always, together with their respective bodies, be found to have lost their vitality, the connection between them and the dental artery and nerve, the means of supporting that vitality, having been previously lost; in this state the irritation of the dead fangs produces an absorption of the osseous structure of the jaw immediately surrounding them; and occasionally inflammation and suppuration take place in what may be regarded as comparatively an early period of the disease.

Mr. Fox advances no direct opinion regarding these affections as they occur in the under

jaw, although he must have been well aware of the different structure of the superior and inferior maxillary bones, as well as of the different formation of the under and upper teeth. Several of the cases which he relates are, however, affections of the under maxilla, a fact which virtually proves his admission of the same disease to the latter.

He believes with Mr. Hunter, that in some instances, the disease may be produced by the obliteration of the duct leading from the nose to the maxillary cavity, even when the teeth are perfectly sound, but advances no satisfactory reason or proof to establish such an opinion. For my own part, I am perfectly convinced, that such an opinion is not consonant with fact, and that these diseases cannot exist without being brought on by some previous disease, or disorder of the teeth, or of the parts immediately related to them. As far as my own experience extends, I have never failed on a minute and careful investigation of the original symptoms, to find this opinion of the causes of the disease satisfactorily confirmed.

All the various affections of the jaw which

Mr. Fox has either seen or related, and of which he gives us more or less perfect engravings and histories, may be presumed to have taken their origin from some disordered state of the teeth, or from the local irritation produced by dead teeth or roots, or from disease and irregularity in their relative parts.

The treatment recommended by Mr. Fox, like that of Mr. Hunter, will always be inefficient unless the disease is in its incipient state, and the tooth, which he recommends to be extracted, the exclusive or principal exciting cause; in this case, that operation, which is the most, and sometimes the only useful part of the whole treatment, may afford nature the necessary assistance to effect a cure of the malady, notwithstanding the counteractions produced by pernicious operations and remedies.

These are, however, instances of rare occurrence. In a more advanced state the extraction of the tooth is merely palliative, and the parts remain predisposed to a dangerous relapse. Hence, the frequent recurrence of the disease after surgical treatment; hence, the reluctance of surgeons and dentists to interfere in such

cases; and hence the general neglect of proper treatment in their early stages.

In page 126 of the Essay already referred to, Mr. Fox says, "When the matter has been discharged, the object must be to restore the parts to their former condition; with this view, a solution of tincture of myrrh is to be frequently injected with a syringe through the opening."

How far the morbid action of so formidable a disease can be changed to a healthy one, and parts so peculiarly constituted and affected, restored to their original state, merely by the use of a syringe and a solution of tincture of myrrh; and this without removing the more active, local, chemical, and mechanical exciting causes of this morbid action, may be readily conceived, without any further observation on my part.

Indeed, not only all the cases related by Mr. Fox, and which by a timely and judicious dental treatment might probably have been brought to a successful termination, but also the vague modes of treatment generally recommended by various writers, furnish proofs of the imperfect knowledge which at present exists with respect

to them; nor can we fail to regret the inactive manner in which dental surgery stands by, and looks at the heart-rending sufferings of such of our fellow-creatures as become the victims of this cruel malady.

In the case of Mr. W. at page 130, Mr. Fox states, that for nearly five years, the disease was palliated by a repeated use of the lancet, under the direction of Mr. Cline; the unfortunate patient, however, was at length gradually destroyed by a malady which, I doubt not, might have been cured in one-fourth of that time, by a proper dental treatment of the various parts involved in the disease. I must not, however, be misunderstood; for it is not my intention to censure either the surgeon or the dentist, as both of them adopted and adhered to the practice usual on such occasions; it is the inefficacy of the practice that I wish to expose, and of which I might perhaps produce no better proof than the fact, that under the direction of one of the most eminent practical surgeons and dentists of this country, it has been totally unsuccessful. I may, however, be permitted to express my opinion, that the dentist who would be deemed deserving of the confi-

dence of society, ought, in all matters which belong to his particular profession, to be directed by the competence of his own judgment, grounded upon a full and scientific knowledge of the principles of his art; and it can scarcely be denied that the management of the diseases of the maxillæ would be most advantageously entrusted, in all their stages, more or less, to the care of one thus qualified.

It is, moreover, but just to state, that it is impossible for the surgeon, who has not had the opportunity of making Dental Surgery his most judicious study, to be capable of observing these maladies, and watching them with the necessary accuracy during a gradual and protracted progress, generally occupying a period of from five to ten years, and sometimes even twenty-five or thirty years, before they arrive at their ultimate, and often fatal termination. This difficulty may, probably, have given origin to the very incorrect name of "Diseases of the Maxillary Antrum;" and to it also may be attributed the frequent and erroneous belief of their spontaneous origin in the cavity or mucous membrane lining the cavity of the jaw.

Nor, without this particular attention, is it possible for the general surgeon to become sufficiently acquainted with the curative effects of any system of treatment; hence arises, not only the erroneous supposition of the incurability, and the consequent passive treatment, of the diseases in question, but also the determination to attempt their cure at every hazard, and with the greatest sacrifices, by such means as are within the comprehensive reach of general surgery.

The baneful effects which result from the present imperfect pathology of the teeth and their relative parts, are particularly evinced by the following most extraordinary instance of severe treatment, extracted verbatim from the Medico Chirurgical Review, for July 1826, p. 288.

"Dr. Regnoli, of Forli, relates a case, in which a fungoid affection of the maxilla and gums, was successfully treated by the removal of the alveolar process, of both jaws. The patient, a woman, thirty-five years of age, had had carious teeth from her infancy, and was almost constantly tormented with severe toothache. She was besides subject to frequent erysipelas of the head, and neck.

"Towards the close of 1824, she discovered a small tumour, behind the last molar tooth of the lower jaw on the right side. It soon ulcerated, and rapidly spread to the gums and alveoli of both jaws. These parts were much swollen, and considerably contracted the cavity of the mouth. The fungoid excrescences, poured out blood on the slightest touch, and continually produced a thin, and fetid discharge. The deformity was considerable, and the voice was altered. The limits of the disease were well defined, and the lymphatic system did not appear to be affected, but the patient experienced much pain, her countenance was dull, and cachectic, she lost flesh, and had febrile exacerbations in the evening. In this state of things, the patient was admitted into the Hospital at Pesaro, where after having first performed the operation on the dead subject, Dr. Regnoli"--no doubt, after having divided both cheeks to a considerable extent at both angles of the mouth,—"removed the teeth and alveolar processes of both jaws, with the exception of the last molar tooth on the left side of the lower jaw, the socket of which appeared to be sound. From the situation of the

parts, the saw could hardly be employed, hence, it was merely used to form a shallow groove in the most prominent parts of the bone, the separation of which was effected by means of a chisel and mallet. Actual cautery was applied to the bleeding vessels, and to such suspicious parts as were not accessible to the knife. The lips of the external wound were brought together by three gold needles, and the twisted suture.

"The first day after the operation, the patient referred her pain to the throat, rather than to the parts which had been operated upon. She had severe headache, which was attributed in part to the shock given to the head by the strokes of the mallet, and to the division of the dental nerves. The needles were removed on the fifth day. On the fifteenth, seventeenth and eighteenth, some portions of exfoliated bone were detached. On the nineteenth, the lips could be closed for the first time. By the twenty-third all tumefaction had subsided, the voice was improved, the catamenia, which had been long absent, had re-appeared, and the other functions were in a natural state. On the thirtieth the sole remaining tooth was removed, as

it interfered with mastication. Five days later, she left the hospital in good health. The lips fell in a little, especially the lower, but the deformity was very slight. The voice, which had not quite recovered itself, was daily improving.

"Dr. Regnoli concludes, that though the disease should return, the operation was still proper and necessary. Without it, he considers that death would have been inevitable, and he urges in its favour,—that it incurred but little danger,—that the practice of Dupuytren and Vacca support it—and that the disease does not always return."

From the description of the above case, I have no hesitation in positively asserting, that the mere extraction of all dead roots and such teeth as were loose, or suffering from complicated caries, would have been better calculated to effect an expeditious and radical cure than the above extremely painful and destructive treatment.

To the same principle may fairly be ascribed, also, the first introduction of the formidable operation of amputating a part, and sometimes even the whole of the affected jaw. This treatment, however, although creditable to its ingenious

discoverer, and justly conferring the greatest honour, not only upon him, but also upon every one who has skilfully performed so difficult an operation, is still only applicable to those cases in which the disease affects the under maxilla; independently of this, it is in itself appalling, dangerous, and certain in many cases to prove of a fatal character; and even in its more successful instances, not unlikely to be followed by a total loss of future comfort.

Although it is quite unnecessary to dwell upon the risk usually accompanying this operation, yet a peculiar danger to which it exposes the patient should not be passed unnoticed, namely, that of the retraction of the tongue by the glosso-pharyngei muscles, after having lost the counter-action of the geneo-glossi, drawing this organ forcibly backwards and downwards against the pharynx so as to prevent the air from penetrating into the glottis, in consequence of which, sudden death may ensue from the suspension of respiration. This fact has been first pointed out by some German surgeons, who have considered it a sufficient reason for abstaining from the operation, and M. Delpech

has confirmed the fact in a paper, read before the Royal Academy of Sciences of Paris, Oct. 16, 1827. See the Lancet, vol. I. p. 492, 1827-8.

Indeed, it is the intricacy of the maxillary diseases which has so frequently baffled every surgical management,and driven the surgeon from the golden middle course, to the pernicious extreme of either the most neglectful, or the most active treatment; and thus in former times, the surgeon having neglected to notice the causes of both the primary and secondary affections of the maxilla, has either declined active treatment,or found himself disappointed, after repeated extirpation of spongy, sarcomatous, osteosarcomatous, and other excrescences, by a return of the disease; while the modern surgeon considers it a favourite CHEF D'ŒUVRE of the art to remove, at one operation, both the secondary and primary disease, as well as all their local causes, by the amputation of a part or the whole of the alveoli or the jaw.

The maladies of the maxillary bones, if not more common in England than on the continent of Europe and America, are at all events, not unfrequently met with in this metropolis. As a proof of this, I must be permitted to ob-

serve, that I have seen many instances of this terrible disease in almost all its different stages, during my short residence in London, not only in my own immediate practice, but in cases which have been placed under my care by medical friends.

In January, 1826, I witnessed the disease of the upper maxilla, in its incipient stage, in the cases of two gentlemen nearly related to each other, and considered it my duty to inform them of their situation, and of the danger they incurred by the neglect of a timely proper treatment, but so little were they conscious of that danger, that I was neither able to convince them of the truth of my statement, nor to prevail upon them to submit to the most simple treatment for insuring an immediate and certain cure of the disease.

On November 15th, 1826, Mr. Lawrence was consulted by two individuals; one affected with the disease in its fistulous state in the right side of the upper; and the other in the left side of the under maxillary bone; both were diseases of some years' standing, originally produced by dead stumps of teeth, and particularly aggravated at that time by other carious teeth,

and a general diseased state of the mouth. Both cases were placed under my care by this gentleman, and cured by a complete removal of the causes of the disease.

Were it necessary, I might relate many other cases of diseases of the upper and under jaw, which entirely arose from diseases of the teeth, gums, and sockets, and which were perfectly cured by dental treatment.

The successful result of the above cases have not only proved personally gratifying to myself, but lead me to assert, that, having directed my particular attention to such maladies for many years, and enjoyed ample opportunities of minutely observing them in every stage, so far from considering them incurable, I believe them to be as much within the influence of curative treatment, as any disorder of the mouth. I beg to add, that should the result of my observations prove beneficial to humanity, I shall consider myself richly rewarded for the exertions I may have made to establish a proper mode of treating this destructive disease.

PHYSIOLOGICAL AND PATHOLOGICAL REMARKS ON THE JAWS.

The maxillæ are subject to accidental injuries as well as to the morbid affections common to all other bones of the human frame; and which may be the consequences of primary affections, either of the soft or of the osseous structures, connected with, or contiguous to the maxillary bones.

When the primary disease affects the soft parts, the secondary effects upon the maxillæ are comparatively slight, and so little dangerous as to be rarely noticed. They will be invariably removed by the curative powers of nature, or by common medical and surgical treatment; as they never produce permanent diseases in the jaws, their consideration will not receive our further notice in the present essay.

The particular structure, formation, and situation, however, as well as the physiological, physical, and mechanical functions of the jaw-bones, and the relation in which they stand with the contiguous osseous parts, not only render them peculiarly liable to be influenced by the

various idiopathic diseases of the teethand sockets, but frequently occasion them to suffer from those affections which are sympathetically excited by diseases of distant parts.

The diseases of the maxillæ rarely, if ever, have their origin in the cavity or antrum; but, in every instance where the mucous membrane lining the cavity is affected, this will be found the consequence of disease, or mortification of some part of the osseous structure surrounding it; these diseases have, therefore, very incorrectly received the general denomination of diseases of the maxillary antrum; a mistake which has led to both erroneous theory and practice, with respect to such diseases.

Incorrect nomenclature is, without doubt, injurious to science; and it is surprising, how the most enlightened and celebrated pathologists have sometimes been misled by improper names, and, notwithstanding they have been sensible of the inconvenience, have exerted themselves to justify error rather than correct it. Indeed, not a small number of the best curative remedies in surgery, as well as in medicine, may be proved to have been frequently misapplied, or ren-

dered injurious, by the improper technicalities which have been gradually admitted into pathological science.

That the upper and under jaws are equally subject to the diseases in question, is sufficiently evident from the cases related by Mr. Fox, in his Natural History of the Teeth, &c. as well as others which I shall refer to in the sequel of this Essay, and also from general experience; nor do they seem to be less dangerous in the one than in the other; nor to differ materially in their progress of ravage and destruction; for, while it may be justly supposed, that this progress in the upper jaw is facilitated by its greater vascularity and more spongy structure, it must also be considered that this difference of structure, as well as the situation of the upper jaw, affords a greater chance of natural palliation, by the more convenient absorption or discharge of the matter formed by the disease; and while the more dense osseous construction of the under maxilla, and the greater activity of the absorbents in one way retards the progress of the malady; from the lesser curative activity possessed by these parts, and their inconvenient situation

for the discharge of the matter, it is less counteracted by the former, and more aggravated by the latter, in the under than in the upper jaw.

In the same way we may account for the fact, that when the upper jaw is affected, the soft parts connected with the disease more frequently terminate in cancerous ulcerations without much tumefaction; while in the under jaw, sarcomatous and osteosarcomatous tumours are more liable to occur, and ultimately prove fatal by the supervention of carcinoma.

Such tumours ought always to be regarded as consequences of some other primary affections, the tumefaction taking place at any period of the primary disease; and it is probable, that the sooner or later occurrence of the swelling, or the formation of excrescences depends as much upon the state of the constitution, as on the local affection itself.

In delicate, but otherwise not vitiated constitutions, the bones are much less dense in their structure; and the disease more generally proceeds in a chronic state, than in those that are strong and robust; the matter perforates the bony structure with more facility, and is dis-

charged sooner, and more conveniently; and the disease is thereby constantly relieving itself when arrived at an acute state, and returns to its chronic form; and thus tumefaction is much retarded. It is in this form that the diseases of the jaws are observed most frequently to proceed in the United States; and perhaps also in all other warm climates.

In strong constitutions, in consequence of the dense structure of the bones, the disease finds more difficulty in forming openings for the discharge of the pus, which is therefore retained and absorbed; the efforts of nature are also greater, the inflammation more active, and the action of the absorbents is more excited; the bones consequently sooner expand, and the surrounding parts enlarge to a considerable size, so as even to produce much deformity at an early stage of the disease: many of the cases which I have seen in England were of this description; and I believe it may be justly presumed, that the malady more frequently proceeds in this manner, than in the former, in this country and on the continent of Europe.

If judiciously treated, the latter cases admit

of more successful treatment than the former: but on the contrary, if they be neglected or ill managed, afford the most dangerous varieties of the disease.

If art lends its aid to remove the local causes of the disease, nature will soon effect a perfect cure without further assistance. But the constitution being more active in its curative efforts, although incapable of removing the local causes without surgical assistance, the morbid action is liable to be increased by such powerful exertions of nature. If, moreover, these natural efforts are improperly interfered with by the treatment usually applied in cancerous affections, such as the exhibition of henbane, hemlock, mercury, &c. or by operations usually adopted in general surgery, the disease is seldom even palliated, and frequently aggravated by such unnecessary and painful operations, or stimulant remedies, all of which, when applied without a previous removal of the local exciting causes, must naturally augment the disease in the same manner as, though in a greater degree than the unsuccessful efforts of nature. Hence it is in this state, that the disease is more frequently

instance, without the removal of the local causes of both the primary and secondary local malady, will only aggravate the disease, and hurry it to its malignant state. And thus the surgeon after the removal of a polypus, a spongy or bony tumour, will often be disappointed by its rapid return, unless the morbid structure of the jaws be also removed or cured, nor will it, in the above instance, be sufficient to attend to the primary disease of the jaw itself, the extirpation of the excrescence or tumour will generally be indispensible.

But on the other hand, if, in such instances, the affected jaw or a part of it be removed, without a proper attention to the constitution and the morbid local predisposition of the other parts of the mouth, a return of the disease in the remaining portion of the maxilla, is just as probable as under either of the former suppositions, notwithstanding the amputation may appear at first successful. Independently of this, it must be admitted that it is in itself fraught with more immediate danger than the other modes of treatment; and although it may now and then succeed, that it is scarcely practicable in very

late stages of the disease. Indeed, I am inclined to assert, that there is no chance of its success at any later period than that, when a simple removal of the exciting causes with the consequent tumour and a due attention to the constitution would never fail to ensure a complete, and certainly a more desirable cure.

OF THE SYMPTOMS OF THE DISEASES OF THE JAWS.

The symptoms accompanying the maladies of these structures are similar to those occasioned by dead roots, and teeth, or by affections of the alveoli and periosteum; they do not materially differ in the different stages and forms of the diseases except in the degree of their violence. The pain being more influenced by general or local causes of excitement, than by the chronic inflammation itself can scarcely serve as a criterion of the state of the disease, or for its treatment; it is of a chronic nature, generally situated in the affected parts, but sometimes extending itself, more or less, to all the other parts of the mouth and head; as the

alveoli, gums, and living teeth, the ears, the eyes, and, when accompanied with fever, to the forepart of the head, and occasionally to distant parts of the body; in some instances, the parts more immediately affected suffer from pain of a lancinating character.

OF THE CAUSES OF THE DISEASES OF THE JAWS.

The proximate causes of these diseases are, as far as my experience has enabled me to judge, inflammation, suppuration, and mortification, commencing in the alveoli and the periosteum, and thence extended and communicated to the osseous structure, and the lining membrane of the cavity of the jaw.

The exciting causes are, not only those already stated as the proximate causes of the disease, but also all diseases of the teeth, alveoli, periosteum and gums; as also dead and loose teeth, and decayed roots, or stumps of teeth, and tartar; all of which will be generally, more or less, observed to accompany the diseases of the max-

illæ. See my Dental Surgery, case 4, 24, 25, 26, 27, and 33, and the cases here annexed.

These local causes are much aggravated by the slightest derangements of the constitution, such as general maladies of an acute and chronic nature, and, more particularly a disordered state of the fluids and solids.

An unnatural and improper diet, whether deficient in nourishment or debilitating by its stimulating effects, such as the abuse of wine, and ardent spirits; all powerful medicines and narcotics, even those remedies generally considered specifics against cancerous disease; such as henbane, hemlock and mercury; indeed, any general stimulating medicine which is administered, previously to the removal of the local irritating causes, will tend materially to aggravate the maladies The improper use of mercury, in some instances however, has been the original cause of these diseases; of this case No. 3. of this Essay, furnishes a striking illustration.

The local predisposing, or remote causes of these affections are a peculiar formation of the maxillæ and teeth, such as a soft structure of the former, or unusual length, and curved

formation; and especially, an irregular and inconvenient situation of the fangs of the latter, by which an unnatural and morbific mechanical irritation is produced, by the pressing of one jaw upon the other, particularly during mastication; this irregularity I have very frequently observed in cases that I have had an opportunity to examine.

To these may be added a great variety of mechanical, accidental, and artificial causes, such as fractures of the jaws, and all improperly performed dental operations, such as extracting, or breaking out teeth with undue violence. See my Dental Surgery, case No. 33: and also case No. 2 of this Essay of osteosarcoma of the lower jaw: the injudicious insertion of artificial teeth; see case No. 4, of my Dental Surgery; the transplanting of teeth from one mouth to another; the danger accompanying this operation is best illustrated by referring the reader to a most distressing case which proved fatal, stated in the Medical Transactions of the College of Physicians of London, Vol. iii. page 325—338. The replacing of teeth, which have been extracted either by mistake, or with a view

to render them incapable of being painful; see my Dental Surgery, case 35. The luxation of teeth, or the partial extraction of them by tearing, or dividing the nerve cord or fasciculus of the nerves, with a view to render them free from pain, and subsequently leaving them in their sockets. All operations performed with an intention of destroying the nerve or sensibility of painful teeth, and thus to cure the toothache, all of which not only affect a sudden destruction of the vitality of the teeth, but are productive of violent and permanent irritation upon the parts locally as well as generally connected with them; such as the application of concentrated acids, and caustics, the actual cautery, or the knife for the extirpation of the lining membrane of the teeth; see my Dental Surgery, case 42; and lastly, and above all, the operation of cutting off the crown of a tooth; a treatment which has lately been recommended for the toothache; see my Dental Surgery, cases 4 and 27.

With the exception of this last operation, the various methods, which have been recommended by Messrs. Hunter, Fox, and other dentists, for the purpose of destroying the vitality of the

nerves of the teeth, have been adopted to cure or preserve the teeth themselves, more or less with a view to their subsequent utility, and although the good effects may be very doubtful, their authors are entitled to our consideration and gratitude for their humane intentions. But the operation of breaking or cutting off the crown of painful teeth, which the inventor calls excision, is nothing less than an amputatation by violent means, and cannot be adopted from any other cause than a culpable timidity on the part of the patient or the dentist, who are thus led to substitute it for the necessary extraction of the teeth, without even preserving the only useful and essential part, viz. its crown. It unquestionably effects, although not either without pain, or so instantaneously as it is asserted, a destruction of the vitality of the remaining roots or stumps which then become extraneous bodies; the permanent irritation of which, however, must tend to excite disease and induce mortification not only in adjoining parts, but also in the remaining teeth and gums, not to mention the very great and dangerous irritation produced at the same time upon the whole nervous system.

Should this be doubted, I beg to refer every medical and surgical reader to a careful examination of the parts which will evidence the fact; for it will be found, that, in a hundred jaws containing roots or stumps without one single exception, the parts contiguous to the roots exhibit some marks of disease or mortification; unless, indeed, the teeth have been broken after the death of the subjects from which the bones are taken.

In all preparations of the maxillæ, which contain stumps or roots, the gums will always be found more or less inflamed, and the sockets either wasted away by gradual absorption, or in a state of mortification, and often spongy, perforated, &c. Where the expulsion of the roots of teeth has been left to the slow process of nature, a total destruction of the alveoli is the inevitable consequence; and not unfrequently, very considerable portions of the bony structure of the jaw will perish through the diseased action. When, however, a tooth or teeth have been timely extracted, not more than the extreme process of the alveoli is generally absorbed, while the greater part has been transformed by

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healthy granulation into a strong bony ridge, frequently maintaining a height nearly on a level with the sockets of the remaining anterior and posterior teeth of the same side.

But, as regards every beneficial effect which has been asserted to result after the excision of the crown of teeth from the remaining stumps or roots, and particularly as to their possessing a power of granulation, it is hardly necessary to observe, that such assertions are entirely unfounded and erroneous, and in total opposition to all sound physiology and pathology, as well as to observation and experience.

Indeed, were such injudicious and unnatural treatment in dental surgery to be extensively adopted, we might certainly look forward not only to a considerable augmentation of all sorts of diseases of the teeth, and their gums and sockets, but also of this terrible malady of the maxillæ. Fortunately, however, this treatment is so evidently absurd, and its inconsistency with all good surgical principles so glaringly visible, to all who are in any degree acquainted with the most common and simple physiological and pathological facts concerning the parts involved in

such an operation, as to render it quite undeserving of further refutation, had not even the principles of the operation been already perfectly refuted by all the most important facts and arguments maintained throughout my "Principles of Dental Surgery," but more especially in Part II. Chap. II. "On the morbid effects of dead teeth, and stumps and roots of teeth," &c. to which I must refer the reader for a more extensive enquiry into the subject, as well as to cases 4, 25, 26, 27, and 33, of the same work.

OF INFLAMMATION AND SUPPURATION OF THE JAWS.

Inflammation of the maxillæ, the most common disease to which they are liable, much resembles inflammation of the sockets of the teeth, being either an extension of it or originating from the same causes which produce the latter affection.

At the commencement of the disease, and frequently for some time after, the morbid irritation arising from the above causes, either in con-

sequence of the immediate contiguity or the sympathy of parts, occasions what may at first be regarded as a secondary affection of the osseous structure of the jaws and their lining membranes, which at length take on a state of idiopathic inflammation, that sooner or later ends in suppuration.

In some instances, the disease assumes a more acute form, and is accompanied by considerable tumefaction of the soft parts, occasionally forming a considerable abscess, the matter of which is ultimately discharged, and the malady then assumes a chronic character.

In the latter state, the disease may proceed in a very gradual manner for three or five years, during which it now and then changes from the chronic to the acute state, accompanied by inconsiderable pain, and giving little warning to the patient, or even to the attending surgeon of the dangerous extent to which it has advanced. The matter being constantly, partly absorbed and partly discharged, either through the sockets of the dead roots or teeth, or through some small perforations in the external structure of the alveoli, and then car-

ried off with the saliva, the malady, while it causes a considerable destruction of the parts affected, for the most part maintains its chronic state, and proceeds without changing much its external appearance, except as may regard the occasionally increased swelling of the gums and cheeks. The removal of the tumefaction in the soft parts, which generally follows the more convenient discharge of the matter, greatly adds to the deceptive character of the disease.

In some rare instances, a spontaneous cure may take place in consequence of nature timely removing the exciting causes, or the primary affection dependant upon them; but more commonly the disease at some period or other changes into a more violent stage, and becomes fistulous or otherwise complicated.

OF FISTULOUS PERFORATIONS AND ABSCESSES OF THE JAWS.

In this kind of disease, the lining membrane of the maxillary cavity has not unfrequently been destroyed by the constant and

protracted inflammation and suppuration, the absorbent vessels of the surrounding parts lose their energy and fulfil their offices very imperfectly, the cavity becomes loaded with matter, and the internal cellular structure, particularly if the under jaw be the seat of the disease, becomes more carious; the pus becomes very fetid, has a greenish or blackish appearance, and is very acrid. Those parts of the jaw which are most acted upon by the chemical power of the matter, either from their situation or from the nature of their structure, are gradually destroyed, the cheek becomes red and inflamed, and assumes an erysipelatous appearance.

In the upper jaw, the matter generally perforates the outside of the gums, or makes its way below the cheek bone and through the outside of the cheek. See my Principles of Dental Surgery, case 26, 25.

In the under jaw, the disease very frequently first produces a fistulous opening through the bony structure and gums; at a later time it perforates the under edge of the jaw, the matter forming an abscess under the chin, and being ultimately discharged externally.

By the partial removal of the pus the progress of the disease is again retarded in some degree, and considerable swelling prevented or removed; in this state it may proceed for a considerable time, even for many years, without the patient being sensible of his danger, so that even in this advanced state, he neglects to apply for proper surgical aid, especially if he belongs to the lower class of society, who are habitually inattentive to the cleanliness of the mouth, and apt to consider such diseases agreeably to their vulgar notion and denomination of face-ache, cold, or rheumatism of the face or jaws, and as the French term it, un coup d'air or fluxion, &c. See Principles of Dental Surgery, case 24, and cases 1, 2, 3,4, and 5, here annexed.

OF MALIGNANT OR CANCEROUS AFFECTIONS OF THE JAWS.

In advanced stages of maxillary affections, or when they are influenced by a weak or disordered constitution, the malady sometimes increases to an alarming degree, the mortification

of the bones rapidly extending, and the inflammation and tumefaction of the surrounding parts becoming more or less augmented; and frequently such is the expansion of the bony structure, that the surrounding parts of the jaw bone are increased greatly in size.

The constitution now necessarily suffers to a great extent, and if the disease be not arrested, the ulceration rapidly increases, and its destructive ravages are soon extended to other important structures of the mouth, as the palate, the fauces, &c. at length inflammation is communicated to some important part, as to the brain, and thus becomes fatal; or the disease assumes a cancerous character, the unhappy victim ultimately sinking under its protracted and heart-rending progress. See Principles of Dental Surgery, cases 4 and 27.

The following instance of carcinomatous disease of the mouth is particularly illustrative of this malady, not only in its last stage, but also in its origin and slow progress. The subject of it was a patient of St. Thomas's Hospital, under the care of B. Travers Esq, who very obligingly afforded me every facility in repeatedly

inspecting the disease, and ascertaining its pathologicalhistory as correctly as possible.

CASE I.

" F. Onion, aged 56, entered the Hospital on the 3rd of May, 1827; and the account which he gave of his case in the beginning of July, when I first saw him, was as follows.

Although originally possest of a robust constitution, as long as he could recollect, at least for the last twenty-five, or thirty years, his mouth had never been healthy. He had many carious teeth, dead stumps and roots, but he rarely submitted to the extraction of a painful tooth, generally permitting it to rot away. His gums were diseased and inflamed, and he frequently suffered from gumboils, swellings of the face, &c.

About six months previously to his entering St. Thomas's Hospital, he applied to a Surgeon in order to have a carious, and troublesome molar tooth of the upper jaw extracted It was at this time that he was first informed of his peri-

lous situation, of which he had previously entertained not the slightest suspicion. He was advised to enter St. Bartholomew's Hospital, where he remained for a short time under the care of Mr. Lawrence, but soon left that institution.

In examining his mouth, a truly appalling sight appeared. The greater part of the roof of the mouth, but particularly the right side and its posterior angle with the velum pendulum palati was in a state of ulceration, extending about two thirds of the semicircle of the maxillary bone, including all the alveoli of that side, and those of the cuspidati of the left side of the upper jaw.

The teeth of the affected parts, with the exception of a few small remnants of the roots of the incisors and cuspidati, had been partly destroyed by ulceration, and had successively dropt out in a state of putrefaction, and the few teeth remaining in the upper jaw, and all in the inferior jaw were very loose, encrusted with tartar, and tender.

The cheeks were but little swollen, but the glands of the lower jaw on each side were

greatly enlarged and very hard to the touch. The affected parts, and, indeed, all the structures of the mouth were very tender, and the patient often suffered lancinating pains in different parts of the head.

The disease had evidently committed great and deep ravages in the affected structures, the external surfaces of which had a florid red appearance, and were covered with a tough, greenish, dark, and exceedingly fœtid matter, which was constantly discharged in considerable quantity.

The greatest part of this matter, during a recumbent posture of the body, was swallowed by the patient. When asleep he made a constant gargling noise, and his throat seemed to be frequently choaked up, of which he was relieved every minute by swallowing the collected matter and saliva; and by this channel, as well as by absorption, &c. the matter was without doubt led to affect the general system. It is by a consideration of this that we may, perhaps, best account for the following very curious and uncommon sympthomatic phenomena accompanying this case, which, as taken

in connexion with the maxillary disease, are particularly deserving of pathological reflection.

On the abdomen were two subcutaneous tumours, and at the lower part of the chest another; the latter of a round, the two former of a flattened and circular form, and about one inch in diameter; they were hard and firmly attached to the skin immediately covering them, which had assumed a blue appearance, but did not adhere to the parts beneath them; the two made their appearance about seven, and the other about three months ago. Formerly the patient enjoyed tolerably good general health, but for the last ten years he had been occasionally affected with gout and rheumatism; during the last three months, however, his constitution had appeared much broken; and when I last examined him, in the presence of Mr. Travers, he was so weak as to be hardly able to remain, for a few minutes out of his bed, to afford the necessary opportunity for a minute consideration of the local disease. It was then evidently in a malignant state, and every hope of arresting the disease was despaired of; it is, however, not im-

probable that only one year ago the health of this unfortunate man might have been perfectly restored by the treatment I shall presently describe.

OF POLYPOUS, OEDEMATOUS, SARCOMATOUS, FUNGOUS, AND OSTEOSARCOMATOUS TUMOURS AND EXCRESCENCES OF THE JAWS.

Sometimes from some accidental excitement, or from a peculiar irritation produced by the osseous structure upon the periosteum, or the mucous membrane lining the cavity of the jaw, or the external periosteum and the gums during the progress of the diseases already described, large tumours or excrescences are formed on these parts. These tumours are either of a soft fleshy cellular structure, or of a spongy and osseous kind, filled with matter and forming either polypi or exostoses, which seem to be equally common to both jaws. When they occupy the upper jaw they may sometimes be found to enter the nose and even the orbit of the eye, and by their gradual increase the cheeks become very much swollen as well as

all the parts involved, great deformities of the face, distortions of the nose, the eyes, and other parts being the necessary consequences. Sometimes they will project into the nostrils and through the sockets of the eyes, actually dislodging the eye ball, which then protrudes in a most disgusting and hideous manner.

In the under jaw these tumours are often of a spongy or osteosarcomatous nature, and particularly disposed to extend to an immense size; sometimes they are accompanied by the formation of polypi in the ears, and discharges of matter or the protrusion of excrescences, either polypous or osteosaromatous, from these organs. Notwithstanding their very formidable appearance, however, these diseases are neither more dangerous, nor less tractable under a proper treatment, than those of the upper jaw.

If, however, under all these various complications, these maladies are not properly treated and completely arrested in their progress, they generally become cancerous, and thus terminate fatally ; or by gradually weakening the constitution, and predisposing it to the influence of other diseases eventually assist in destroying

the unhappy victim. See Fox's Nat. Hist. of the Teeth, &c. Plate VI, VII, and X.

The following case of Osteosarcoma of the lower jaw is exceedingly illustrative of the statements I have made, and must be deemed highly interesting. Not having seen the case myself, I have extracted its history verbatim from the "Lancet."

CASE II.

"William Cooper, aged 50, a vigorous and healthy looking man, states that about twenty years ago he had one of the molar teeth extracted from the right side of the lower jaw."—This tooth must have been extracted with considerable violence, or, what is more probable, have been broken and the stump or part of its roots been left in the socket.—"Two months after, he perceived a small nodule, which was produced from that part of the alveolar process whence the tooth had been drawn. It imperceptibly increased in size for several years, but its progress was unaccompanied by pain. To

the best of the man's recollection, sixteen years after the appearance of the nodule, the two remaining molares of that side became loose, and eventually dropped out. He then, for the first time, discovered a hardness extending from the bicuspid tooth of the same side backwards, to the ramus of the mylo-hyoid line; occasional pains attacked the part yet he did not seek medical aid. In the month of June last, a swelling began to manifest itself externally which, taking the direction of the man's finger for our guide, occupied the space intervening between the right ramus, and the anterior edge of the masseter muscle; there was occasional severe pain extending upwards to the side of the head. He applied at this period, to a medical man in the country, whose advice gave great consolation. He desired him to apply a bread and water poultice, and gave him to understand he would expedite the cure in a week. Both patient and doctor, were deceived however. Fnding no relief, and fancying Galen rather out in his prognostics, he withdrew himself altogether, from the benefits of 'sound chirurgical.' In the month of October last, he

fell, and struck the part against the shaft of a waggon: considerable bleeding took place into the mouth. A fortnight after the receipt of the blow, the tumefaction sensibly augmented; the pain became more severe, and of greater duration, and toward the end of December, exfoliation of a small portion of bone took place, close to the bicuspid tooth, which was followed by temporary relief. The swelling continued to increase up to his admission into the Hospital, on the 4th of February last. On examination, the disease extended from the angle along the ramus of the right side, as far as the cuspidati, and thence backwards to the basis of the tongue. A concavity, of about an inch in depth, occupies the vacant alveolar process, extending from the bicuspid tooth to the ramus of the mylo-hyoid line. The swelling has a firm cartilaginous feel; the glands of the neck appear free from disease, and likewise the integument covering the diseased bone. A portion of bone being felt in the hollow, a pair of dressing forceps were introduced, and the fragment extracted. Since the removal, the patient has experienced little or no pain: an occasional fœtid discharge takes

place. As the jaws will not admit of a wider separation, than merely to admit a small finger, mastication is performed with much difficulty." See the Lancet Vol. XI. page 747.

OF THE TREATMENT OF THE DISEASES OF THE JAWS.

If the foregoing description of the maladies of the jaws and of their causes as I have pointed out is correct, it requires but common sound judgment to decide on the proper treatment. It is necessary however, to abandon all old prejudices and practices, resulting from an insufficient acquaintance with the subject, and to prescribe those remedies which are as simple and rational, as they are certain in their salutary effects, and which are founded on a perfect acquaintance with the Natural History and the pathology of the parts affected: the latter of which seems to have been insufficiently known, and for the most part not understood by all the writers who have hitherto written on this disease, with whom I am acquainted.

Although the principles of treatment of either of the diseases described in the preceding pages, which are in fact but different forms and stages of the same malady, do not materially differ, still they admit of considerable variation in the extent to which they may require to be carried; I have therefore thought it best to give a separate account of the curative means, which might be indicated for every particular disease, in the same order as I have described the diseases themselves; and I shall now proceed to give the necessary directions, and lay down the rules for that curative plan, which, under my experience, has seldom failed to effect a perfcet cure, even in such cases as have advanced to a considerable extent.

OF THE TREATMENT OF INFLAMMATION AND SUPPURATION OF THE JAWS.

The first and most important indication of treatment in this affection is, to remove from the maxillæ and every part of the whole mouth, whatever irritation may have produced, or which

tends to keep up the inflammatory action. This may generally be affected by the extraction: 1st, of every dead root and tooth; 2nd, of every tooth suffering from complicated caries, or every painful tooth; 3dly of every large grinder which is deprived of its antagonist; and, 4thly, of every other tooth which is loose, irregular, or situated in any part primarily affected, or in any way capable of acting as a cause of irritation and excitement upon any part of the mouth, or which might be in the least suspected to interfere with the exfoliation of the dead parts, or with the complete removal of them.

All the teeth and roots which constitute the causes of the disease should be removed, if possible, at the same time, for a removal at different intervals will greatly diminish and protract the salutary result of the treatment. This, however, may frequently be deemed impossible, and the dentist must content himself with their removal at different periods. Any treatment, however, without the removal of them altogether, at least in a short space of time, will only be an injurious palliation, and occasion a relapse

of the disease, sometimes more violent than the first attack, for the remaining affected teeth will keep up the morbid action, and either lessen or totally prevent the healthy inflammation of the whole mouth, but especially in the parts most extensively affected; whereas, a perfect removal of these causes followed by the greatest cleanliness of the mouth, will frequently effect a cure for the disease even without any further operation.

The second indication is, to procure the most favourable discharge of the matter, and promote the healthy actions of the parts affected by the adaptation of such means as are consistent with correct general surgical principles. As a more distinct illustration of the above treatment, I beg to refer the reader to the cases 3, 4, and 5, in the sequel of this Essay.

CASE III.

Captain M—. of the East India Company, from Calcutta, laboured under a most distressing and complicated affection of the mouth, the effect of

an unparalleled abuse of mercury which had been exhibited only eleven months previously.

He came to England, accompanied by a medical gentleman, on leave of absence from his regiment, to seek for surgical advice, and visited Mr. Lawrence, June 11th, 1826, soon after his arrival in London, who requested him to consult me immediately.

The patient was a tall, well formed, handsome young man, about twenty-one years of age. According to his own statement his health was originally excellent, and his constitution strong, and only one year previously he was in the possession of a complete set of teeth, they, as well as all their contiguous parts being perfectly sound, regular and beautiful; this was still evident, from the appearance of the remaining parts, which in the morbid and dead state evinced the most striking evidence of their previous perfection.

All the teeth, although entirely free from caries, or any disease of their bony structure, were now perfectly dead, and only mechanically held in their sockets. The periosteum was also totally destroyed, either by absorption or corrosion. The alveoli were not only dead,

but in a state of putrefaction, their upper edges all round the semicircle of the mouth being from an eighth to a quarter of an inch exposed, and exhibiting from their cadaverous appearance a very frightful aspect. The gums were partially destroyed, and the remaining portion of them either gangrenous and sloughing, or in a state of inflammation and suppuration. The disease had already extended to the maxillary bones, and their osseous structure as well as the periosteum of their cavities was more or less under the influence of inflammation, suppuration, and mortification; but more especially the left side of the upper jaw, which was already much increased in size, accompanied with a correspondent swelling of the cheeks. The face was flushed, and the skin had a bloated erysipelatous appearance, and the patient suffered excessive pain of the whole mouth, the jawbones and other parts of the head, as well as of other more remote parts of the system.

There was a constant flow of viscid ropy discharge from the mouth, like that of great salivation, mixed with greenish matter,

and accompanied by a fœtid cadaverous odour, emanating from this fluid and the dead and morbid parts, and so exceedingly offensive as to be almost insupportable to the bystander.

The malady was also particularly complicated, as well as highly aggravated by a great many adhesions of the muscles of the jaws to each other, which had taken place during the excessive salivation previously mentioned, in consequence of which, the unhappy patient had lost almost all power of moving the under jaw. From these causes, the teeth were mechanically pressed into their dead sockets, and by this unnatural and permanent pressure, the absorption and exfoliation of the sockets were greatly retarded, and the immense irritation already produced by the dead teeth and sockets upon the gums and other soft parts highly augmented, not to mention that these adhesions particularly impaired the enunciation of the patient.

In addition to these evils, this almost complete closure of the mouth and teeth had for a long time prevented the patient from taking

solid food, and indeed hardly admitted a sufficient quantity of fluids to preserve his deplorable existence, especially during a long and tedious sea voyage; an evil which would have been nearly destructive to the patient, had it not been in some degree lessened by the removal of one of his incisors. He laboured under excessive debility and nervous irritability, accompanied by fever and general emaciation, in short, his general health had suffered to such a degree that his life might be regarded to be in a most precarious state.

TREATMENT.

The principal indication of treatment in this interesting case was evidently to relieve the inflammation of the surviving osseous and soft structures, by promoting the exfoliation of the carious sockets and other bones, and more especially, by removing all the dead teeth. These operations, however, were rendered particularly difficult and painful by the fixed state of the under jaw; to this the great debility of the patient added another very considerable obstacle, notwithstanding his surprising fortitude; the following treatment however was adopted.

June 12th, 1826. Seven dead teeth were removed, and the patient directed to wash his mouth frequently with a mixture of the tincture of myrrh, honey, and sage tea.

June 16th. Two dead teeth were extracted, and the use of the mixture continued. The patient's health and strength were already improving, and by the extraction of his front teeth, he was enabled to take more nourishment.

June 19th. Four teeth more were removed, the health of the patient still continuing to improve. Some parts of the sockets had come away by exfoliation. The patient complained of pain in the jaws.

July 7th. I found our patient almost recovered and in excellent spirits. Mr. Lawrence who had seen him a few days previously, had taken away the greater part of the remaining teeth and sockets, which had become so loose as to be removed without much difficulty.

Aug. 11th. Captain M. visited me to state that all the remaining dead teeth and sockets had been removed some time previously by Mr. Lawrence. His health had much im-

proved, and his mouth was healing very rapidly. His speech however remained very defective, a misfortune principally owing to the almost total loss of motion of his under jaw. He intended in a few days to depart for Ireland to visit his relations and friends, and to return after some time to submit to the necessary operations to cure the adhesions of his mouth, agreeably to the advice of Mr. Lawrence, and then to supply the deficiency of his teeth by a double set of an artificial masticating apparatus.

OF THE TREATMENT OF FISTULOUS ABSCESSES OF THE JAWS.

A similar treatment to what has been before recommended in cases of simple inflammation and suppuration is applicable to fistulous abscesses, especially if the affection be seated in the upper jaw, for by the removal of the injurious teeth, a convenient and sufficient outlet for the matter will be invariably obtained, and every external opening of the face will be readily

closed by the requisite surgical management; and a perforation of the partition between the antrum and the nose, or any other part of the maxillæ, will not only be unnecessary, but will always form an artificial cause of aggravation, and tend to retard the recovery of the affected parts.

Should the malady, however, be seated in the under jaw, and so far advanced as to have already penetrated its under edge, it will be sometimes necessary to allow the matter to escape externally through the parts best adapted to the situation of the diseased structures and cavities. The mouth should be washed six or eight times a day with a mixture of the tincture of myrrh and honey, diluted with sage tea, and the cavity cleared twice or thrice a day with a lock of cotton, or a very soft brush of bristles, sufficiently soft and long to clean it without occasioning more than a gentle irritation, previously dipped in the above mixture or warm water.

The usual method of retaining cotton or lint in the diseased cavity seems to me to be rarely applicable, and from the peculiar struc-

ture, situation, and functions of the parts, injurious in most cases, as it not only interferes with the free discharge of the matter, but also prevents, in some measure, the cleansing and salutary effects of the mixture and of the saliva, both of which act as a constant emolliating stimulant upon the morbid parts.

The general state of the constitution should be attended to in every medical view, but particularly the functions of the alimentary canal; such medicines, however, should be carefully avoided as have a tendency to act disadvantageously upon the glandular, or osseous system.

To preserve the necessary constitutional strength, a wholesome and nourishing diet, free from undue stimulant and irritating properties is of the greatest importance. It should principally consist of bread, or farinaceous preparations, and broth, or a proper quantity of easily digested animal food, as beef, mutton, game, &c.: as a beverage, tea, or toast and water may be taken with advantage, but all fermented liquors should be entirely avoided, and spirituous drinks, as brandy, &c.

taken in very moderate quantities only; the patient should be directed to keep his mind and body as tranquil as possible, to take exercise, but to avoid fatigue and to guard particularly against exposure to great heat or cold.

The above treatment I believe will seldom fail to ensure a successful result, even when applied at an advanced stage of the disease: it must, however, be well considered, that the removal of a malady, from five to twenty years standing, cannot be obtained suddenly, but by a gradual process; and it is obvious that any enlargement, especially of the bony structures, can be removed only by a gradual increase of the natural energy of the parts, and by considerable efforts of the constitution proportioned to the previous gradual increase of the malady.

OF THE TREATMENT OF MALIGNANT OR CANCEROUS AFFECTIONS OF THE JAWS.

Even in this terrible state of the malady, if it has not extended its ravages to the important organs connected with the upper jaw,

and if the constitutional strength of the patient has not been much reduced, a perfect cure may not unfrequently be obtained by a judicious adoption of the remedies already enumerated.

In those cases, however, in which the malady has proceeded to so great an extent, as to render the above mode of treatment, and the energetic application of these general and local means insufficient, it is to be feared that every other mode of treatment, including amputation itself, will be of no avail, but rather tend to accelerate a fatal termination of the disease. See case 1, of this Essay, and cases 4, and 27, of "Principles of Dental Surgery."

OF THE TREATMENT OF POLYPOUS, ŒDEMATOUS, SARCOMATOUS FUNGOUS, AND OSTEOSARCOMATOUS TUMOURS OR EXCRESCENCES OF THE JAWS.

The management of these complicated forms of maxillary affections should generally be the same as that already recommended, although it may often require to be carried to a greater

extent, and the additional application of surgical operations; for such tumours and excrescences must be considered as consequences, and not as causes of the diseases of the jaws.

In such cases it is particularly requisite that all teeth should be removed from those parts of the jaw whence the disease originates, and from both sides of the tumour, so far as the bony structure of the maxillæ is morbidly affected, even though they should be perfectly sound in their bony structure. And it is hardly necessary to add, although it is of no small importance, that the utmost care should be observed to use the least possible violence, and to cause as little irritation and pain as possible in performing all the Dental operations.

If the diseases should be accompanied by œdematous and sarcomatous polypi, or tumours, the restoration of healthy action, by the perfect removal of the morbid causes, combined with the other remedy already recommended, will not unfrequently cause them to slough away without any other operation; should nature, however, not be sufficiently active in her curative efforts, they may be removed either by the knife, forceps, or

scissars, without any danger of a recurrence. Should the tumour be of a spongy or osseous nature, exostosis, or osteosarcoma; I would advise that it be not interfered with until it is found that nature is not able to remove it, or until the general healthy action of the mouth, and the whole system shall have been to a certain degree restored, after which it may be extirpated by the most convenient surgical means.

In the Essay on exostosis, contained in that very valuable, and practically useful work, entitled: "Surgical Essays." by Sir A. Cooper, Bart. and B. Travers, Esq. page 192, the opinion of Sir Astley so entirely corresponds with my own, that I cannot desist from the gratification of making use of his own words.

"As to the treatment of this disease," he observes, "it consists in first seeking the source of irritation, and removing it when discovered in order to prevent the further progress of the disease; and indeed, it may be probable, that the removal of the source of irritation might sometimes, even when the disease has advanced to a considerable extent, succeed in producing a cure, and therefore it is desirable

to wait the event before any further operation be undertaken.

"Should this, however, prove insufficient, it will be necessary that the external shell of the bone be removed by means of a saw, and that the cartilage which it contains be dislodged by an elevator. If the integuments be carefully preserved, little deformity follows; and thus by a simple operation, destruction, otherwise inevitable, is prevented."

Indeed, I confidentially believe, that by the complete and judicious removal of all the local causes which gave first rise to the malady, and which have produced and kept up the formation and increase not only of morbid tumefactions, polypous, œdematous excrescences, but even of spongy exostosis, or osteosarcomatous diseases, and by the healthy action thereby excited, nature will not unfrequently effect their gradual removal either by sloughing or exfoliation; should it however not be equal to this task without assistance, it will at least produce such a concentration and demarkation of the secondary disease, as to afford a greater facility for the removal of any excrescence or

tumour, by such other surgical means, as the case may require.

Even if the whole of the inferior jaw be involved in osteosarcoma, I am convinced that, although it be gradual and slow, a more certain restoration will be effected by the plan above described, than by amputating the diseased jaw, independently of the greater danger and pain, and the loss of the important parts that cannot fail to be sustained under the latter operation.

At all events the temporary delay of such operation in a chronic malady can be productive of no disadvantage, while a proper dental treatment must tend to improve the healthy action of the mouth, and thus insure a greater degree of success, should the amputation still be deemed necessary; besides, a premature or hasty performance of the operation will frequently lead to a treatment that may not only frustrate the cure, but unnecessarily endanger the health, or life of the patient.

Indeed, the relief which removing the teeth, although not actually diseased from caries, affords to the other parts affected, as well as the

healthy stimulus thereby excited is not sufficiently appreciated, and the manner in which it tends to promote the process of exfoliation, absorption, and ultimately to a perfect restoration of health in a most wonderful and surprising manner, is practically far more important than has hitherto been conceived; and I feel warranted by considerable observation and experience in asserting that in almost every case where a recovery can be reasonably expected, after a complete, or partial amputation of the jaw, it will be more certainly and better obtained by the above treatment.

Under a conviction of its efficacy, I feel it my duty to urge that the formidable operation of amputating the jaw should not be undertaken until a fair trial of this milder system of treatment has first been made, and the more especially, as no increased difficulty or danger need be apprehended from the temporary delay which would thus be occasioned. In conclusion, I beg to remark, that although I express my opinion that the important diseases in question admit generally of a more simple cure, it is far from my intention to detract from the great me-

rits of those gentlemen who have recommended and undertaken the operation in question, which although it were never performed by men of talent inferior to those possessed by Messrs. Dupuytren, Cloquet, Lallemand, Graeff, Mott, Mc 'Lellan, Cusack, Crampton, Wardrop, and Hodgson, it must be confessed, is always to be regarded as one of the most precarious and appalling character.

The following highly complicated cases are particularly illustrative of the pathology and treatment of these diseases which I beg in conclusion to subjoin to this Essay.

CASE IV.

Mr. S——, from ——— a gentleman of about fifty-five years of age, of a very robust, and plethoric constitution, and constant active habits of life gave the following statement of his case.

His health had been generally good, but during the last six years he had sometimes suffered from swellings of the face, accompanied by an erysipelatous appearance, and heat of the skin,

as well as obtuse pain particularly situated in the nose, and its surrounding parts.

About eighteen months previously to his coming to town he discovered a small excrescence in his nose, followed by a considerable discharge of greenish fœtid matter. His surgical attendant removed the tumour with the forceps, assisted by the application of lunar caustic, but without effecting a permanent cure. The disease continued after a variety of surgical treatment, and its repeated extirpation was uniformly followed by returns of the excrescence, the general health of the patient becoming evidently affected, he was urgently advised by his Physician and Surgeon to visit London, in order to avail himself of the professional talents of Mr. Lawrence. On an examination of the case, this gentleman instantly detected the actual disease as well as the particular exciting cause. Viewing it as a case of osteosarcoma of the nose, and suspecting the state of the teeth to be the cause of the disease, he directed the patient to take my opinion with respect to the condition of his mouth.

By a careful inspection I found the whole of

the gums and sockets more or less suffering from that disease, of which I have more particularly treated in the 2nd part of my Dental Surgery, chapter III. p. 270 under the title "Of the Devastation or Absorption of the Gums, and Sockets of the Teeth." These parts were in a state of great inflammation and suppuration, his teeth were much encrusted with green tartar, and many of them so far deprived of their gums and sockets, as to have become very loose, and their preservation was not only impossible, but their retention appeared to be a powerful exciting cause of the diseases of the mouth, notwithstanding they were entirely free from caries. The upper and under cuspid teeth were much out of their natural line, and from the permanent irregular action of one jaw upon the other, the lateral incisor, cuspidatus, and first bicuspis of the left side of the upper jaw had been deprived of their vitality, the fangs of which by their irritation had produced the exostosis.

The tumour adhered to the mucous membrane of the left nostril, and was about two-thirds of an inch in length, and a quarter of an inch in diameter; and I gave it as my opinion that a

permanent removal of the exostosis, and a complete cure of the disease could not be obtained without the extraction of every tooth, which from the loss of its vitality, or deprivation of a considerable part of its sockets, and irregularity of its situation, acted as a powerful permanent exciting cause of the disease; and the truth of this assertion will be particularly proved by the sequel of the case.

THE TREATMENT.

It was in the beginning of March, 1827, when the excrescence was removed by Mr. Lawrence, and soon after the operation, the patient called on me, and stated that it was the request of this surgeon, that I would do every thing the case might require.

March 9th. Five teeth were extracted, and the patient directed to wash his gums with an astringent lotion eight or ten times a day.

March 13th. Two teeth were removed, and the use of the lotion requested to be continued.

March 16th. Four teeth were extracted and the removal of three teeth more was particularly urged, but the patient would not submit to the operation.

March 21st. The teeth were scaled, and the use of a proper powder and brush directed.

March 27th. The scaling of the teeth was repeated and every direction given to preserve a perfect cleanliness of the mouth; I again very particularly explained the necessity for the removal of the remaining injurious three teeth, which were the lateral incisor and cuspidatus of the left side of the upper, and cuspidatus of the right side of the lower jaw, but nothing would induce the patient to submit to the supposed disadvantageous loss of them. Having already so much recovered his general health from the removal of the stated eleven teeth, and the local disease seeming to him also to be very rapidly improving, he hoped that the extraction of these three teeth might prove ultimately unnecessary, and he insisted at all events upon giving this a sufficient trial, before submitting to their removal.

After returning home to the country, the local disease continued to improve, but did not perfectly subside. Some inflammation remained, and a return of the tumour was apprehended, in consequence of which the gentleman visited

London again, and on consulting Mr. Lawrence, that gentleman now positively insisted on the extraction of the three teeth I had pointed out as the cause of the irritation kept up in the affected parts.

May 10th. These three teeth in question were extracted.

May 15th. The teeth were again scaled and all the tartar perfectly removed.

After this complete removal of the local exciting causes, the inflammation and pain in the nose almost immediately subsided, and healthy inflammation and absorption of the diseased gums and sockets followed, as well as a complete cure of the local affection.

The patient was now rapidly restored to vigorous health, which he has ever since continued to enjoy.

CASE V.

Mr. D——, the son of a very respectable solicitor of ———, in Staffordshire, consulted me concerning a complicated disease of the upper

and under jaws. As the malady had been of very long standing, I beg leave first to give some account of its progress, and next of the state in which it was when it first came under my care.

According to the history I obtained from the father and the patient himself, the latter had always enjoyed good general health, and was considered a hearty child, but had very frequently suffered from his teeth. Both the first and second set had been very irregular, much affected by caries, and often painful. His face had been sometimes swollen in consequence of the diseased state of the gums and dental sockets. At the age of about eleven, his teeth and gums became particularly troublesome, and at the same time also a polypus appeared in theleft ear.

The polypus was extirpated, but the wounded part always remained sore, and some matter was continually discharged from a fistulous opening in the ear.

The best medical and surgical advice in this country was obtained. In 1818, Sir Astley Cooper attended the patient, in consultation with Samuel Patrick, Esq. The opinion entertained at that time by this eminent surgeon on this

uncommon and obscure case, is contained in the following note obtained from the patient himself, and which I beg leave to state.

Master D———'s Case.

"Mr. Astley Cooper is of opinion, that a tendency to scrofula in the constitution of Master D—— was the cause of the polypus which appeared in the ear twelve months ago, and which cause has also induced the disease in the parotid absorbent glands.

"He is fully persuaded that the complaint will ultimately do well, though it will be tedious, and in all probability more exfoliation of bone will take place both in the ear and in the orbit, or rather perhaps in the malar bone." This has taken place, and several portions of exfoliated bones are in my possession. "His general health is the chief thing to be attended to, and twenty grains of bark with ten grains of soda, are to be given occasionally twice a day; a small dose of calomel and rhubarb is also to be given once in ten days or a fortnight, and the ear is to be syringed every day with warm water.

"Saml. Patrick.

"Bartlett's Buildings, Aug. 17, 1817."

Subsequently to that period several other eminent physicians and surgeons had been consulted, and the disease was unanimously considered to be of a scrofulous nature and treated accordingly. Change of air, residence at the sea-side, travelling in the interior of England and France, and every means which medicine and parental affection could supply were resorted to, and upwards of five hundred pounds was spent by the father with the hope of seeing his son once more restored to health.

No attention had been paid to the state of his teeth at any period of the disease, and some of his surgical attendants in the country had positively forbidden any recourse to the dental art, although nature had distinctly called for its assistance, by thrusting out some teeth and carious parts of the sockets of its own accord. No doubt this advice was founded on the principles that no benefit could be obtained from Dental Surgery, and that it was consequently much better to leave the local disease entirely to the sanative efforts of nature, than to frustrate these efforts by an improper treatment of the teeth. For my own part, however, I do not hesitate po-

sitively to assert, that by a judicious dental treatment a perfect cure could not have failed to be effected at that period, or at any subsequent time.

In April 1825, when I first saw the patient, then about twenty years of age, a considerable sarcomatous swelling originating from the lower part of the inner plate of the ramus of the left side of the inferior jaw, extended downwards under the chin, and upwards over the left cheek, causing a distortion of the lips, nose, eyes and all the other features of the face towards the affected side. The matter was discharged externally through four fistulous openings, viz. one opposite the temporal bone, the second at the parotid gland, the third at the maxillary angle under the anterior part of the chin, and the fourth from the ear, a great portion of the external parts of which had been destroyed by the disease.

On viewing the disease within the mouth, it was found that the three molar, and the second bicuspid teeth of the left side had been previously lost, and the membranous and osseous cellular structure of the affected jaw had been destroyed to such

an extent as to form a cavity, extending from the angle to the first bicuspis, and wide enough to allow the introduction and motion of the finger, which was filled with dark greenish matter. The first bicuspis and cuspidatus had lost a part of their sockets, and all the other teeth of the under jaw were either very irregular and carious, and the gums and sockets were either more or less diseased, or in a state of mortification.

The upper jaw of the same side was also diseased, and the antrum filled with pus, the discharge of which was partially obstructed by some dead roots and teeth. All the incisors and molares of that jaw were also very irregular and lapping one over the other, and many of them were either diseased or dead, and their gums and sockets inflamed and suppurating.

The great accumulation of putrid matter and the various mortified, and diseased structures, produced a very offensive and cadaverous smell.

The annexed plates shew the external appearance of the disease when I was first consulted by the gentleman.

TREATMENT.

The treatment I pursued, was the same which I have described in the foregoing Essay.

April 12th. The cuspid and first bicuspid teeth of the under jaw on the left side were extracted, the sockets of which had suffered from the disease, and had thus been rendered a cause of irritation. The patient then became exceedingly timid, and would not permit me to proceed, but promised to return the next morning with his father.

April 13th. Four dead and decayed teeth were removed, which were all that required extraction, from the left side of the upper jaw, which was affected with inflammation and mortification; these operations were followed by a considerable discharge of fœtid matter from the antrum, through the sockets of the extracted teeth, and the disease was immediately relieved from all the direct local irritation. The great timidity of the patient would not suffer the removal of the other teeth that required to be extracted from the opposite side of the mouth on the same day, and it was therefore unavoidably delayed; he was directed to wash his mouth fre-

quently with a warm emollient mixture and the external sores were to be dressed daily as usual.

April 19th. The patient was in excellent health and spirits. The diseased cavities of the left upper and under jaws were under the influence of healthy inflammation and granulation, the discharge from the ear, and from the opening opposite the temple had ceased, and the sore began to heal, in consequence of the relief afforded by the convenient outlet of the matter from the upper maxillary cavity. The suppuration from the other external sores had also diminished in some degree, and the matter had become more concentrated in the swelling under the chin, which gradually increased in size.

Thus encouraged, the patient now very readily submitted to the necessary operations for the removal of seven dead roots, and decayed teeth from the right side of the upper and under jaw, by which every tooth which could cause irregular and morbid action of that side also was removed.

The frequent washing of the mouth was continued, and the diseased cavity of the under jaw directed to be frequently cleansed with a long

soft brush, made for the purpose and dipped in the warm lotion.

April 23. The evident successful progress of the cure greatly elevated the spirits of the patient, who was in very good health. The whole mouth now was under the influence of healthy inflammation. The health of all the diseased antra continued to improve, and absorption in all the sockets and gums of the upper and under jaws was going on regularly. The external fistulous sores were all improving, and the tumour under the chin had much increased; I proposed to open the abscess immediately and let the matter escape in the most favourable direction under the chin, with a view thereby to allow the other external sores to heal as soon as possible, but I was again prevented by the timidity of my patient. Determined, however, to lose no time, I advised an immediate consultation with Mr. Lawrence who entirely concurred with my opinion, and kindly agreed to perform the operation immediately. The discharge of the matter was considerable, and the immediate relief, as well as the further favourable result of the treatment was evident

and highly gratifying to the patient. The abscess was dressed in the same manner as the other sores, and particular care taken to keep the puncture open.

April 26th. All the parts affected were doing remarkably well; the matter being now regularly discharged from under the chin, none could collect in the diseased antrum, or in the under jaw, and granulation was therefore greatly facilitated; the upper diseased maxillary cavity, as well as the diseased gums and sockets, was rapidly recovering health, and the external sores were daily improving.

April 29th, May 3rd, and 7th. The same healthy process was found to continue, and the local and general health of the patient was improving.

May 10th. The whole mouth and the diseased parts were rapidly proceeding towards a perfect recovery; but the patient complained of a violent cold which he had contracted since his previous visit.

May 21st. I received a note from the father informing me that his son was very ill, and particularly desirous of seeing me at his residence

in Westminster. I went immediately and found him confined to his bed by a violent attack of erysipelas, a malady very prevalent at that time in Westminster. The patient was under the care of Mr. Pearse the regular medical attendant of the family, and Dr. Jas. Johnson, who had been called in consultation; but although all the aid medical care and skill could afford was thus had recourse to, the malady proved fatal on the 26th. of May.

POST MORTEM EXAMINATION.

On the 28th of May, Mr. Pearse and myself obtained permission from the parents to examine the mouth of the deceased.

The suppuration of the diseased cavity of the under jaw was found to have much decreased, the expansion of the osseous parts diminished, and granulation had evidently taken place in some of the affected structures; the swelling of the face had also much decreased.

On the left side of the upper jaw, the healthy appearance of the gums showed that the progress of the disease of the antrum had been suspended, no trace of inflammation remaining.

The gums and sockets of the upper and under

jaws on the right side were found in a perfectly healthy state, the alveoli nearly absorbed, and the parts whence the teeth had been extracted nearly cicatrized.

A due consideration of the above facts cannot fail to shew the propriety of the treatment which had been adopted; and there can be no doubt that the patient would have been rescued from the jaws of certain death, and cured of a most distressing malady of ten or twelve years standing, had not the success of the local treatment been frustrated by the interference of a general malady, which at that time, as already stated, was very prevalent in the neighbourhood, and, as Mr. Pearse informed me, proved fatal to many others as well as to this patient, amongst the number of whom was the Uncle of the deceased.

FINIS.

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Lately Published, by the same Author,

PRINCIPLES OF DENTAL SURGERY; exhibiting a New Method of Treating the Diseases of the Teeth and Gums, especially calculated to promote their Health and Beauty; accompanied by a General View of the Present State of Dental Surgery, with occasional References to the more prevalent Abuses of the Art. In Two Parts. By LEONARD KOECKER, Surgeon-Dentist; Doctor in Medicine and Surgery; Member of the Medical and Linnæan Societies, and of the Academy of Natural Sciences of Philadelphia, &c. Price 14s, boards. Underwood: Fleet-street.

"The volume is one, indeed, from which those interested in this branch of the art will derive much information, and shews Mr. Koecker to be a man of good medical education, as well as of considerable research."—*Lond. & Med. Phys. Journ. Oct.* 1826.

"We have reason to know, that Mr. Koecker is a very excellent practical dentist; and that the zeal and ability with which he manages every operation he undertakes, are truly praiseworthy."—*Dr. Johnson's Med. and Chirurg. Review, Jan.* 1827.

"Although several works have appeared on the natural history of the teeth during the last half century, and in this department of science much information has been obtained, the treatment and general management of the organs have usually been committed to men, whose opinions and whose practice have been merely empirical. They have trodden the same dull round through a long series of years, and have laboured but little to improve the principles of an art which has been degraded below its proper level, only because such individuals have exclusively exercised it.

"The volume of Mr. Koecker, though directed principally to the teeth, proves the great advantage of studying a single branch of medical science, after having acquired a knowledge of the general principles of the whole; and if not without faults, which we may point out, is certainly a better work, and more generally instructive than any other we are acquainted with. He has discussed more particularly the relations of the teeth with the other organs of the body, and the consequent necessity of having a reference to the state of the dental apparatus in many different maladies.

"These observations (Mr. K.'s) are truly valuable, and will, we trust, have much weight in preventing many of those operations which, though sanctioned by so great a name as that of Hunter, must, in the present day, have appeared to a reflecting mind exceedingly irrational.

"Instances have occurred where even fatal tetanus has succeeded to imprudent extraction of a tooth, when the operation had been performed without reference to the state of the mouth, or the circumstances of the constitution. The observations of Mr. Koecker on this point are very excellent, and shew that he well understands the subject upon which he writes.

"We have known cases, and indeed they frequently occur, where general remedies are utterly useless till the local affection of the gums and mouth has been relieved; and here, therefore,

the operation must be performed immediately. On the other hand, in this, as in other surgical operations, the general system may be in such a state of irritation, that though the operation itself may be exceedingly proper, it might be dangerous in the extreme to perform it till the morbid excitement of the constitution shall have been allayed. The directions of the author on this head are so judicious, that we quote them at length.

* * * * * * *

"To these directions we consider it unnecessary to add a single remark.

"The chapter on the preservative treatment of the teeth and gums is deserving of great attention. Mr. Koecker has given one admirable proof that this is a duty, when alluding to the exhibition of medicines which are considered injurious to the teeth; and he asserts, and we believe correctly, that the loss of teeth after salivation is not so much owing to the medicine, as to the neglect of a timely application of proper dental assistance.

"One of the most interesting and important parts of the volume is that which has for its subject 'the treatment of the teeth and gums of children at the time of the second dentition;' as, upon the proper practice at this time, much of the health of the mouth in after life depends.

"In the other section, that on plugging the teeth, we are again fortunate enough to agree with him. The proposal of Mr. Fox, for plugging the teeth with melted metal, has always appeared to us extremely irrational, and the observations of Mr. Koecker, consequently, very accurate."--*Lon. Med. Rep. Oct.* 1826.

"Our author justly observes, that the treatment of the diseases of the teeth has been too long left by the medical profession in the hands of men, for the most part unacquainted with the principles of physiology and pathology, and whose ingenuity has consequently been too much limited to the mere consideration of the mechanical means requisite for the local treatment of diseased teeth, or for supplying the defects of such as have been lost.

"Whatever professed dentists may think of Mr. Koecker's work, and of the freedom with which he exposes the mischief which he unequivocally imputes to the majority of their principles and operations, we are quite persuaded, that it must prove essentially useful to the medical profession, and to the public in general. To the medical practitioner, it must be gratifying to see some of the most grievous of the diseases incident to humanity traced to the influence of causes which have heretofore scarcely obtained notice, and still more to observe, that the removal of these causes will often prove an effectual remedy for evils which had previously defied the medical art.

"We have no intention to compliment Mr. Koecker when we state our firm belief that he has clearly shewn, that the influence of diseased or dead teeth remaining in their sockets upon the sound teeth, the gums, the nervous system of the constitution in general, is infinitely greater than the major part of the medical profession are aware of.

"With these remarks, we beg leave once more to recommend the work to the medical profession, as one well deserving of their attention, and from the perusal of which intelligent practitioners cannot fail to derive hints that may be highly beneficial in general practice."—*Quarterly Med. Review, Jan.* 1827.